

NORTH AMERICAN SPECIES OF THE GENERA
SPHÆROCERA AND APTILOTUS (DIPTERA-
BORBORIDÆ) *

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Dr. Frederick Hendel divides the genus *Sphærocera* into two distinct genera, *Allosphærocera* and *Sphærocera* (Wien. Ent. Zeitg. 38, 1-3, 1920). According to Hendel in *Allosphærocera*, the antennæ are widely separated at base, the epistoma is broad, flat, and shield-shaped, with sharp lateral margins, the notum and scutellum have granular processes which give rise to small, short hairs, and the scutellum has distinct tubercles at the margin. In *Sphærocera* the antennæ are not widely separated at base, the epistome is small and does not extend to base of antennæ, the notum and scutellum are smooth and the margin of scutellum is without tubercles. Hendel places such species as *pusilla* Fallén, *coronata* Zetterstedt, *denticulata* Meigen and *hyalipennis* Meigen in the genus *Allosphærocera*, and the species *subsultans* Fabricius in the genus *Sphærocera*. The writer has several specimens of the species *S. bimaculata* Williston and finds that this species does not fit either group. In *S. bimaculata* Williston, the antennæ and epistome show a structure midway between the two groups, the notum and scutellum are smooth as in Hendel's genus *Sphærocera*, but the scutellum has two distinct tubercles which would place it in the genus *Allosphærocera*. Since this species seems to be intermediate between the two genera established by Hendel, the writer feels that the old genus *Sphærocera* Latreille should be retained and the three groups regarded as subgenera. For the third group represented by the species *S. bimaculata* Will. the writer proposes the subgeneric name *Parasphærocera*.

This paper is one of a series on the family Borboridæ.

Genus SPHÆROCERA Latreille

Latreille: Hist. Nat. Ins. Crust. XIV, 394 (1804).

Duda: Tijd. Entom. LXIII (1920).

Hendel: Wien. Ent. Zeitg. XXXVIII, 1-3 (1920).

Black to brown flies. Head hemispherical; face usually produced,

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more or less excavated beneath the antennæ; antennæ short; third joint rounded; arista long and bare; front broad, without bristles; vibrissæ present; eyes rounded, usually on lateral protuberances. Mesonotum devoid of bristles, scutellum short and broad, posterior margin rounded, usually with small tubercles, never with bristles. Abdomen moderately long and broad. Legs strong, the hind pair elongated; hind tibiæ usually with an apical spur; hind metatarsi incrassate, as long as or longer than the second joint. Wings longer than abdomen; fourth and fifth veins complete and reaching the margin of wing; third vein not branched; third and fourth veins parallel or divergent; outer cross-vein near wing-margin and much longer than inner; second basal and anal cells distinct.

Genotype: *Musca subsultans* Fabricius.

Subgenera and species of *Sphærocera*.

1. Inner cross-vein very short; abdomen with large yellow spots on dorsum; legs yellow, notum and disc of scutellum smooth; posterior margin of scutellum with two distinct tubercles, one on either side.....n. subgen., *Parasphærocera* Genotype, and only American species, *bimaculata* Will.
Inner cross-vein normally long; abdomen without such spots 2
2. Antennæ narrowly separated at base; epistome small, not extending to base of antennæ; notum and scutellum smooth, margin of scutellum not tuberculate; subgen. *Sphærocera* Lat. 3
Antennæ widely separated at base; epistome broad, flat, and shield-shaped, with sharp lateral margins; notum and scutellum with granular processes, which give rise to small, short hairs; margin of scutellum tuberculate; subgen. *Allo-sphærocera* Hendel 4
3. Hind tibiæ with a long apical spur; front, face, and cheeks opaque black; dorsal segments of abdomen margined with yellow; second segment one and one-half times third; legs short, hairy. Fig. 2.....*subsultans* Fabr.
Hind tibiæ devoid of a long apical spur, legs black, with trochanters, knees, apices, of tibiæ and tarsi yellow; posterior margin of scutellum without tubercles or bristles; hind metatarsi thicker than tibiæ, longer than the next two, but not as long as the next three..... *annulicornis* Mall.
4. Third and fourth veins more or less convergent toward tip; first posterior cell noticeably narrowed; legs entirely yellow; posterior margin of scutellum with faint traces of tubercles; arista two times width of front; hind metatarsi swollen, one and one-fourth times as long as second joint....*pallipes* Mall.
Third and fourth veins not convergent toward tip..... 5
5. Legs entirely black; inner cross-vein distinctly before basal third of discal cell; scutellum with very strong marginal tubercles; notum with four distinct rows of tubercles; disc

of scutellum tuberculate; front with two divergent rows of minute tubercles. Fig. 3.....*scabra*, n. sp.
 Legs varying from almost entirely yellow to black with coxæ, trochanters and knees yellow; notum without distinct tuberculate rows; marginal tubercles of scutellum less pronounced; inner cross-vein at or slightly beyond basal third of discal cell. Fig. 4.....*pusilla* Fall.

SPHÆROCERA (PARASPHÆROCERA) BIMACULATA

Williston (Fig. 1).

Williston: Trans. Ent. Soc., Lond. 1896, 435. Pl. XIV, f. 165 (1896).

(St. Vincent)

Numerous specimens from Florida (U. S. N. M.), Montserrat, Trinidad, W. I. (Busck) and La Suiza de Turrialba, Costa Rica (Schild).

SPHÆROCERA (SPHÆROCERA) SUBSULTANS Fabricius

(Fig. 2)

Fabricius: Spec. Ins. II, 444 (1871). (*Musca*.)

Duda: Tijd. Entom. LXIII, 16 (1920).

Hendel: Wien. Ent. Zeitg. XXXVIII, 1-3 (1920).

Forty specimens of this species from the following localities: Washington: Clarkston (Melander); Pullman (Mann). California: Claremont (Metz); Berkeley Hills (Cresson). Illinois: (Ill. Univ.); Algonquin (U. S. N. M.). Missouri: St. Louis (Warner). Pennsylvania: Swarthmore, Lansdale (Cresson). Vermont: Lyndon (Melander). Massachusetts: Boston (Melander). Washington, D. C. (Coquillett).

SPHÆROCERA (SPHÆROCERA) ANNULICORNIS Malloch

Malloch: Proc. U. S. N. M. XLIV, 363 (1913).

Described from Massachusetts.

SPHÆROCERA (ALLOSPHÆROCERA) PALLIPES Malloch

Malloch: Ent. News, XXV, 31 (1914).

Described from Panama.

Sphærocera (Allosphærocera) scabra Spuler, new species
 (Fig. 3)

Opaque black. Front depressed, rugulose, broader than long; anterior outline of front strongly produced in center; orbital stripes irregularly tuberculate; interfrontal stripes extending to vertex, with a row of distinct tubercles; ocellar tubercle pronounced; eyes on

prominent lateral processes of the head; face strongly produced between and below antennæ; labrum very large, projecting downward; antennæ widely divergent; second joint much larger than third; third joint slightly browned, arising from the deeply concave apex of the second joint; arista very thin and hair-like, two and one-half times antennal length, entirely bare; antennæ resting in deep grooves of the face; cheeks slightly shining; more than one-half as high as eye; lower posterior portion minutely tuberculate. Mesonotum short and broad, with four distinct rows of tubercles; posterior portion of mesonotum with some tubercles in between the four rows; scutellum rectangular with the posterior margin rounded; disc tuberculate; posterior margin with eight very strong tubercles. Legs entirely black, devoid of bristles; hind femora rather long and slender; hind tibiæ with a distinct spur at apex; hind metatarsi thicker than the tibiæ at apex, as long as the much thinner next two joints. Wings slightly browned; wing-veins dark brown; costa bare, first section one-half as long as second, third and fourth sections equal and a little less than one-third as long as second; inner cross-vein at distinctly before basal third of discal cell; basal section of third vein three-eighths as long as penultimate section of fourth vein, and but little longer than outer cross-vein; fifth vein reaching margin of wing; third and fourth veins decidedly diverging at tip; second section of fourth vein much shorter than the last section. Abdomen very broad; dorsum slightly shining, with large ovoid, slightly gray-dusted opaque spots on second, third, and fourth segments; hypopygium large. Halteres yellow. Length, 3 mm.

Type: Male; South Bend, Washington, May 23, 1917 (Melander).

SPHÆROCERA (ALLOSPHÆROCERA) PUSILLA Fallén

Fallén: Dipt. Suec. Heterom. 8 (1920). (*Copromyza*.)

Duda: Tidj. Entom. LXIII, 29 (1920).

Hendel: Wien. Ent. Zeitg. XXXVIII, 1-3 (1920). (*Allosphærocera*.)

The writer examined over forty specimens of this species from the following localities: Washington: Pullman (Mann); Kettle Falls, Clarkston, Kamiac (Melander). Idaho: Kendrick and Chatcolet (Melander). British Columbia: Nelson (Melander); Kalso (Caudell). Massachusetts: Beverly; Cambridge (Burgess). Illinois (Coquillett, Ill. Univ.). Washington D. C. (Coquillett).

Genus APTILOTUS Mik.

Mik: Wien. Ent. Zeit. XVII, 206 (1898).

Strobl: Dipt. Steierm. IV, 276 (1898).

Head broad; eyes prominent; the broad cheeks with a single vibrissa; the very broad front with two pairs of decussate bristles;

ocelli present; antennæ short, with the first joint hardly visible, the second and third equal, the latter subreniform, with a long, slender dorsal arista; face carinate; epistome prominent. Mesothorax a little broader than long, nearly rectangular, no transverse suture; a rather deep depression behind the scutellum, which is broad, somewhat convex, margined behind and with four marginal bristles. Wings and halteres completely wanting. Abdomen elliptical, above and below convex, constricted at the base; second segment hardly longer than third, dorsal sclerites turned down, forming a ridge along the sides; without a connecting membrane; male abdomen with six segments; the hypopygium asymmetrical, the greater part sunken; female abdomen with seven segments, the last two short, seventh very short and transverse. Legs rather strong, nearly destitute of the stronger bristles, bearing a stronger short bristle at tip of the hind tibiæ, hind metatarsi somewhat dilated and abbreviated. (Translation.)

Genotype: *Aptilotus paradoxus* Mik.

The only species of *Aptilotus* described from North America are *A. borealis* Malloch, and *A. politus*, Williston.

Species of *Aptilotus*.

Front and face subopaque; cheeks slightly more than one-half eye-height; second segment of abdomen very slightly longer than third; scutellum two-fifths as long as mesonotum....*borealis* Mall.

Front and face glossy black; cheeks considerably more than one-half eye-height; second segment of abdomen distinctly longer than third; scutellum at least one-half as long as mesonotum
.....*politus* Will.

APTILOTUS POLITUS Williston

Williston: Dipt. Death Valley Exped. 259 (1893). (*Apterina*.)

Mik: Wien. Ent. Zeitg. XIX, 71 (1909). (*Apterina*.)

Originally described from Death Valley, California, and not since encountered.

APTILOTUS BOREALIS Malloch

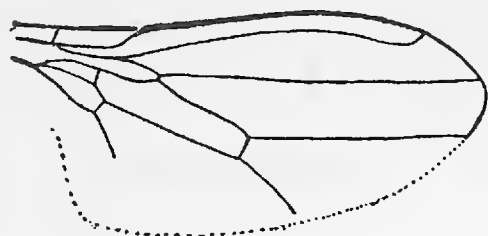
Malloch: Proc. U. S. N. M. XLIV, 361 (1913).

Aptilotus politus Coquillett: Proc. Acad. Sci. Wash. II, 464 (1900).

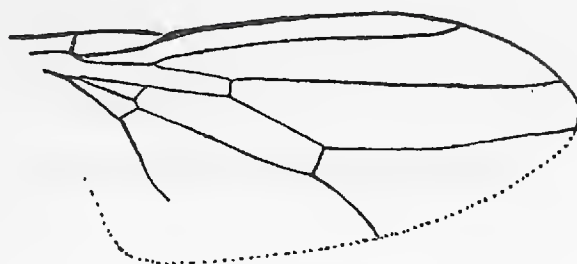
Twenty-four specimens distributed as follows:

Wyoming: National Park (U. S. N. M.). Oregon: Astoria (U. S. N. M.). Montana: Bear Paw Mts. (U. S. N. M.). Washington: Seattle (Kincaid); Bellingham (Melander).

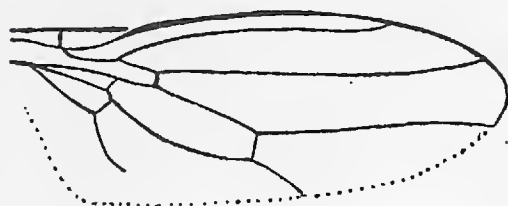
Professor Kincaid obtained his specimens in skunk cabbage (*Lysichiton camtschatcense*).



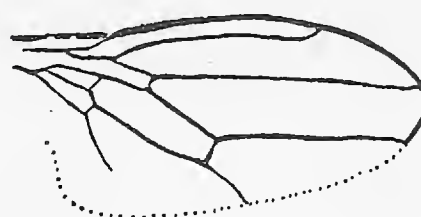
1. *S. bimaculata*



2. *S. subsultans*

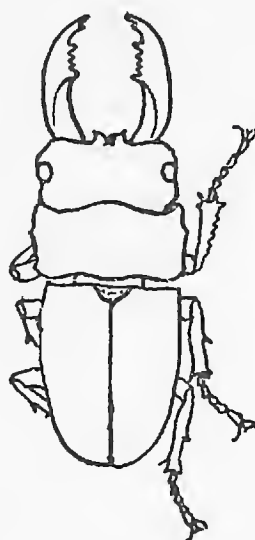


3. *S. scabra*



4. *S. pusilla*

Spuler — Genus *Sphaerocera*



Eurytrachelus platymelus typhoniformis Nagel